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### REMARKS

Claims 1-14 stand rejected under 35 USC §101 as being directed to non-statutory subject matter. Claims 1 and 10-14 stand rejected under 35 USC §102(b) as being anticipated by Adusumilli, U.S. patent 5,870,749. Claims 2-9 stand rejected under 35 USC §103(a) as being unpatentable over Adusumilli, U.S. patent 5,870,749 in view of Sasagawa et al., U.S. patent 6,028,863.

Claims 1, 10, and 14 have been amended to more clearly recite the subject matter of the invention. Reconsideration and allowance of each of the pending claims 1-14, as amended, is respectfully requested.

Reconsideration and withdrawal of the rejection under 35 USC §101 as being directed to non-statutory subject matter of claims 1-14, as amended, is respectfully requested. Section 101 states:

Whoever invents or discovers any new and useful process,  
machine, manufacture, or composition of matter, or any new and  
useful improvement thereof, may obtain a patent therefor, subject  
to the conditions and requirements of this title.

Applicants respectfully submit that the subject matter of the invention as recited in each of the pending claims 1-14, as amended, is directed to patentable subject matter under 35 U.S.C. § 101 and must be examined under 35 U.S.C. §§ 102 and 103 and that the rejection of claims 1-14 under 35 U.S.C. § 101 should be withdrawn.

The computer-implemented method, compiler and platform independent

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framework and computer program product for parsing and generating data structures advantageously is used with various applications, such as ATM call control or data communications, control of writing and reading data storage in disk, tape, or the like, and limiting the subject matter of the invention to a particular application is not required under 35 U.S.C. § 101. Independent claims 1, 10, and 14, as amended, respectively recite a computer-implemented method, compiler and platform independent framework and a computer program product for parsing and generating data structures for use by data processing applications in a computer system. The subject matter of the invention as recited in each of the pending claims 1-14, as amended, is patentable subject matter under 35 U.S.C. § 101 and each of the pending claims 1-14, as amended, is believed to overcome the Examiner's rejection of the claims 1-14 under 35 U.S.C. § 101.

The computer-implemented method, compiler and platform independent framework and computer program product for parsing and generating data structures as recited in each of the pending claims 1-14, as amended, provides a significant improvement over prior art compilers and computer program products; and clearly provides useful results.

In accordance with the invention, instead of implementing a table or rule object as a redundant definition of the data structure, the length and location of each of the data structure's parameters are defined within the table or rule object by the sizeof() and offsetof() functions. Thus, the table or rule object is based on the definition of the data structure itself. The present invention as recited in each of the pending claims 1-14, as amended, eliminate the problem of prior art compilers and computer program

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products, such as disclosed in the references relied upon by the Examiner, of duplicating a data structure definition that is required with both parsing and generating data structures with prior art compilers and computer program products.

As amended, each of the independent claims 1, 10 and 14 expressly recite the practical application for the claimed invention, respectively reciting a computer-implemented method, a compiler and platform independent framework and a computer program product for parsing and generating data structures for use by data processing applications in a computer system. Thus, specific utility of the claimed computer-implemented method and computer program product of the present invention is recited. Reconsideration and withdrawal of the rejection of claims 1-14 under 35 USC §101 is respectfully requested and is supported by case law of the Court of Appeals for the Federal Circuit briefly summarized as follows.

The Court of Appeals for the Federal Circuit addressed the "mathematical algorithm" exception in *State Street* action cited by the examiner. 149 F.3d 1368; 47 USPQ2d 1596 (Fed. Cir. 1998) See 149 F.3d at 1373-75, 47 U.S.P.Q.2D at 1600-02. .

As stated in *State Street*, "When a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101."

In *State Street*, the court, following the Supreme Court's guidance in *Diehr*, concluded that "unpatentable mathematical algorithms are identifiable by

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showing they are merely abstract ideas constituting disembodied concepts or truths that are not 'useful.' . . . To be patentable an algorithm must be applied in a 'useful' way." *Id.* at 1373, 47 USPQ2d at 1601. In that case, the claimed data processing system for implementing a financial management structure satisfied the § 101 inquiry because it constituted a "practical application of a mathematical algorithm, . . . [by] producing 'a useful, concrete and tangible result.'" *Id.* at 1373, 47 USPQ2d at 1601. The State Street formulation, that a mathematical algorithm may be an integral part of patentable subject matter such as a machine or process if the claimed invention as a whole is applied in a "useful" manner, follows the approach taken by the Court of Appeals for the Federal Circuit en banc in In re Alappat, 33 F.3d 1526, USPQ2d 1545 (Fed. Cir. 1994). If a mathematical algorithm is found, the claim as a whole is further analyzed to determine whether the algorithm is "applied in any manner to physical elements or process steps," and, if it is, it "passes muster under § 101."

Computer programs embodied in a tangible medium, such as floppy diskettes, are patentable subject matter under 35 U.S.C. § 101 and must be examined under 35 U.S.C. §§ 102 and 103." In re Beauregard et al., 53 F.3d 1583; 35 USPQ2d 1383 (Fed. Cir. 1995).

In AT&T Corp. v. Excel Communications Inc., et al., 172 F.3d 1352; 50 USPQ2d 1447 (Fed. Cir. 1999), the inquiry of the Court of Appeals focused on whether a mathematical algorithm is applied in a practical manner to produce a useful result. Excel contended that because the process claims at issue lack physical limitations set forth in the patent, the claims are not patentable subject matter. The Court of Appeals

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stated that this argument reflects a misunderstanding of our case law. The cases cited by Excel for this proposition involved machine claims written in means-plus-function language. See, e.g., *State Street*, 149 F.3d at 1371, 47 U.S.P.Q.2D (BNA) at 1599; *Alappat*, 33 F.3d at 1541, 31 U.S.P.Q.2D (BNA) at 1554-55. Apparatus claims written in this manner require supporting structure in the written description that corresponds to the claimed "means" elements. See 35 U.S.C. § 112, para. 6 (1994). Since the claims at issue in this case are directed to a process in the first instance, a structural inquiry is unnecessary. The Court of Appeals "pointed out that "the ultimate issue always has been whether the claim as a whole is drawn to statutory subject matter." 33 F.3d at 1543 n.21, 31 U.S.P.Q.2D (BNA) at 1557 n.21. Furthermore, our recent *State Street* decision questioned the continuing viability of the Freeman-Walter-Abele test, noting that, "after *Diehr* and *Chakrabarty*, the Freeman-Walter-Abele test has little, if any, applicability to determining the presence of statutory subject matter." 149 F.3d at 1374, 47 U.S.P.Q.2D (BNA) at 1601. Whatever may be left of the earlier test, if anything, this type of physical limitations analysis seems of little value because "after *Diehr* and *Alappat*, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing [\*\*23] numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a 'useful, concrete and tangible result.'" *Id.* at 1374, 47 U.S.P.Q.2D (BNA) at 1602 (quoting *Alappat*, 33 F.3d at 1544, 31 U.S.P.Q.2D (BNA) at 1557."

The *State Street* formulation, that a mathematical algorithm may be an integral part of patentable subject matter such as a machine or process if the claimed

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Invention as a whole is applied in a "useful" manner, follows the approach taken by the Court of Appeals for the Federal Circuit en banc in In re Alappat, 33 F.3d 1526, 31 U.S.P.Q.2D (BNA) 1545 (Fed. Cir. 1994). In Alappat, the Circuit en banc set forth its understanding of the Supreme Court's limitations on the patentability of mathematical subject matter and concluded that: The Court] never intended to create an overly broad, fourth category of [mathematical] subject matter excluded from § 101. Rather, at the core of the Court's analysis . . . lies an attempt by the Court to explain a rather straightforward concept, namely, that certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application, and thus that subject matter is not, in and of itself, entitled to patent protection. In both Alappat and State Street, the claim was for a machine that achieved certain results. In the case before us, because Excel does not own or operate the facilities over which its calls are placed, AT&T did not charge Excel with infringement of its apparatus claims, but limited its infringement charge to the specified method or process claims. Whether stated implicitly or explicitly, we consider the scope of § 101 to be the same regardless of the form - machine or process - in which a particular claim is drafted. See, e.g., In [\*1358] *re Alappat*, 33 F.3d at 1581, 31 U.S.P.Q.2D (BNA) at 1589 (Rader, J., concurring) ("Judge Rich, with whom I fully concur, reads Alappat's application as claiming a machine. In fact, whether the invention is a process or a machine is irrelevant. The language of the Patent Act itself, as well as [\*17] Supreme Court rulings, clarifies that Alappat's invention fits comfortably within 35 U.S.C. § 101 whether viewed as a process or a machine."); *State*

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*Street*, 149 F.3d at 1372, 47 U.S.P.Q.2D (BNA) at 1600 ("For the purposes of a § 101 analysis, it is of little relevance whether claim 1 is directed to a 'machine' or a 'process,' . . ."). Furthermore, the Supreme Court's decisions in *Diehr*, *Benson*, and *Flook*, all of which involved method (i.e., process) claims, have provided and supported the principles which we apply to both machine- and process-type claims. Thus, we are comfortable in applying our reasoning in *Alappat* and *State Street* to the method claims at issue in this case."

Applicants respectfully submit that each of the independent claims 1, 10, and 14 recites patentable subject matter under 35 USC 101 and also is clearly patentable over all the references of record including *Adusumilli* and *Sasagawa et al.* Considering the subject matter as a whole of the claimed invention as recited in each of the independent claims 1, 10, and 14 requires a conclusion that all the claims 1-14 are patentable.

Only Applicants teach a method, compiler and platform independent framework for parsing and generating data structures that includes `sizeof` and `offsetof` functions utilized for defining a length and a location of each parameter of a data structure. Only Applicants teach that the length and location of each parameter of the data structure are stored within an identifier object in a data structure definition.

*Adusumilli*, U.S. patent 5,870,749 discloses a method for translating attribute data carried in Common Management Information Protocol (CMIP) Protocol Data Units (PDUs) to/from custom designed data structures. A supplementary method for incorporating user's preferences on the data structures and the relationships

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between different fields in these data structures and the corresponding attribute values is also provided. The translation method automatically performs conversions between the user-designed data structures and various CMIP requests/responses automatically, and, in accordance with user's preferences. The method allows users to simplify and/or compact the storage representation of the Managed Objects by taking advantage of application specific knowledge, and by eliminating unnecessary fields from CHOICE data types in the target data structures. Benefits of the methods presented in this disclosure include automatic translation of CMIP PDUs to/from user-designed data structures, ability to store Managed Object data in space-efficient manner, and automatic generation of data structures for use in communicating with devices using proprietary data representation. At column 11, lines 18-50 states:

"The MOClassTable shown in FIG. 4 contains an entry for each configured Managed Object Class. The localFormClassId field contains the local-form Identifier (an integer value) specified using the LOCAL-ID clause of the CLASS configuration. This may be used internally in place of the object-identifier of the class. The CStructureName corresponds to the name of the C structure specified with the DATA-TYPE clause of the CLASS configuration. By default the configuration program derives this name from the managed object class name (for example by adding a prefix and capitalizing the first letter of the class name). The user can set this to his/her own data structure name, if desired. The CStructureSize field contains the size of the C structure specified in the DATA-TYPE clause. This is only set in the translation tables (the sizeof() operator may be used to compute this size), and is not used in the configuration stage. The ClassInfoPointer field is used to store a link to the meta data generated by the GDMO compiler for this managed object class definition.



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The ClassAttributeTablePointer points to a class-specific attribute table that contains an entry for each attribute included in the ATTRIBUTES clause of the CLASS specification. The localFormAttributeId field of each ClassAttributeTable entry contains the local-form identifier value of the attribute. This value is copied from the corresponding entry in the GlobalAttributeTable at the time of generating translation tables or a new configuration file. The fieldName field is set to the field-name specified for this attribute in the ATTRIBUTES clause, or to the attribute-label if the field-name is omitted. The fieldOffset field is set to the offset of the corresponding field in the C structure associated with the managed object class. This field is set only in the translation tables (the offsetof() macro may be used to compute the offset of the field) and is not used in the configuration stage."

Sasagawa et al., U.S. patent 6,028,863 discloses a device at the terminal unit and a device at the network that support an interim local management (ILMI) protocol. When the power is applied to the device at the terminal unit, it notifies the device at the network of support range information about a VPI/VCI of the device at the terminal unit. The device at the network assigns a VPI/VCI to the device at the terminal unit according to the support range information about the VPI/VCI received in a cold start trap message from the device at the terminal unit when a signal is received from the device at the terminal unit. FIG. 43 shows the data format for use in specifying the connection identifier contained in the signalling message used in the fifth preferred embodiment of the present invention. It shows the details of the element (14) of each message shown in FIGS. 29 through 31. In FIG. 43, the field "virtual path connection identifier" stores the VPCI (corresponding to the VPI), and the field "virtual channel

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Identifier" stores the VCI. The invariable indication field "preferred/exclusive" stores a 3-bit value having one of the following meanings. 000: VPCI is invariable, and VCI is also invariable. 001: VPCI is invariable, but VCI is variable. 010: VPCI is variable, but VCI is invariable.

Each of the independent claims 1, 10, and 14 is patentable over all the references of record including Adusumilli and Sasagawa et al. Only Applicants teach a method, compiler and platform independent framework for parsing and generating data structures that includes utilizing sizeof and offsetof functions for defining a length and a location of each parameter of a data structure; and storing the length and location of each parameter of the data structure are stored within an identifier object in a data structure definition.

Applicants acknowledge that the sizeof() and offsetof() functions are built into the C and C++ programming language. Applicants acknowledge that sizeof and offsetof functions are known in the art, such as disclosed by Adusumilli. However, Adusumilli provides no suggesting of parsing and generating data structures by utilizing sizeof and offsetof functions, defining a length and a location of each parameter of a data structure; and storing said length and said location of each said parameter of the data structure within an identifier object in a data structure definition, as taught and claimed by Applicants. Sasagawa et al. adds nothing to render obvious the claimed invention, as recited by independent claims 1, 10, and 14, as amended.

Neither Adusumilli nor Sasagawa et al., individually or considering the total teachings in combination, suggest nor rendered obvious the subject matter of the

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claimed invention, as recited by independent claims 1, 10, and 14, as amended.

Adusumilli fails to disclose and provides no suggestion of utilizing size of and offset of functions, defining a length and a location of each parameter of a data structure. Adusumilli fails to disclose and provides no suggestion of storing said length and said location of each said parameter of the data structure within an identifier object in a data structure definition, as taught by Applicants and recited in the independent claims 1, 10, and 14. Thus, independent claims 1, 10, and 14 are not anticipated by, nor rendered obvious by the Adusumilli patent. Sasagawa et al. fails to disclose and provides no suggestion of storing said length and said location of each said parameter of the data structure within an identifier object in a data structure definition, as taught by Applicants and recited in the independent claims 1, 10, and 14.

Thus, each of the independent claims 1, 10, and 14, as amended, is patentable.

Each of the dependent claims 2-9, 11-13 further define the subject matter of patentable independent claims 1, 10, and each of the dependent claims 2-9, 11-13 is patentable. Further dependent claims 2-9, and 11-13 further define the subject matter of the invention used with recited particular data processing applications.

Reconsideration and withdrawal of the rejection under 35 USC §101 and allowance of each of the pending claims 1-14, as amended, is respectfully requested.

Applicants have reviewed all the art of record, and respectfully submit that the claimed invention is patentable over all the art of record, including the references not relied upon by the Examiner for the rejection of the pending claims.

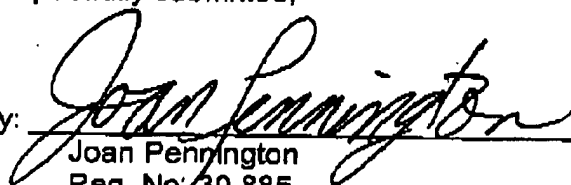
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It is believed that the present application is now in condition for allowance and allowance of each of the pending claims 1-14, as amended, is respectfully requested. Prompt and favorable reconsideration is respectfully requested.

If the Examiner upon considering this amendment should find that a telephone interview would be helpful in expediting allowance of the present application, the Examiner is respectfully urged to call the applicants' attorney at the number listed below.

Respectfully submitted,

By:



Joan Pennington  
Reg. No. 30,885  
Telephone: (312) 670-0736